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**Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/226,418    01/06/99    HASSAN    A    107650

JOHN D TITUS  
BRYAN CAVE  
TWO NORTH CENTRAL AVENUE SUITE 2200  
PHOENIX AZ 85004-4406

QM02/0719

EXAMINER

VERDIER, C

ART UNIT

PAPER NUMBER

3745

DATE MAILED:

07/19/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

**Office Action Summary**Application No.  
**09/226,418**Applicant(s)  
**Hassan et al.**Examiner  
**Christopher Verdier**Group Art Unit  
**3745**☐ Responsive to communication(s) filed on \_\_\_\_\_.☐ This action is **FINAL**.☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

**Disposition of Claims**☒ Claim(s) 1-22 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☒ Claim(s) 20-22 is/are allowed.☒ Claim(s) 1-19 is/are rejected.☐ Claim(s) \_\_\_\_\_ is/are objected to.☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.**Application Papers**☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.☒ The specification is objected to by the Examiner.☒ The oath or declaration is objected to by the Examiner.**Priority under 35 U.S.C. § 119**☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).**Attachment(s)**☒ Notice of References Cited, PTO-892☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2☐ Interview Summary, PTO-413☐ Notice of Draftsperson's Patent Drawing Review, PTO-948☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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***Oath/Declaration***

It does not state that the person making the oath or declaration in a continuation-in-part application filed under the conditions specified in 35 U.S.C. 120 which discloses and claims subject matter in addition to that disclosed in the prior copending application, acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

It does not refer to applications 08/869,725 and 08/869,372 to which priority under 35 USC 120 is claimed.

It does not refer to provisional applications 60/071,140 and 60/071,142 to which priority under 35 USC 119(e) is claimed.

***Specification***

The disclosure is objected to because of the following informalities: Appropriate correction is required.

On page 1, line 9, the patent number for application 08/869,725 should be provided.

On page 1, line 11, --, now U.S. Patent No. 5,938,404, -- should be inserted after "1997".

***Claim Objections***

Claims 14-19 are objected to because of the following informalities: Appropriate correction is required.

In claim 14, line 1, "the" should be deleted.

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***Claim Rejections - 35 USC § 112***

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 19, lines 3-4, "selecting one of the upper ... steps are performed" is a double recitation.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Claims 1-2, 11, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Soviet Union Patent 1,761,973. Note the airfoil 1 with apertures 6 communicating the outer aerodynamic surface to the unnumbered interior volume, diaphragm 2, with the apertures 6 being proximal the trailing edge. The diaphragm is movable from a first position to a second position to push air through the apertures and out of the interior volume, and is movable from the second position to the first position to draw air through the apertures and into the interior volume.

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Claims 14 and 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Hassan 5,813,625 (figures 1-2). Note the airfoil 12 having an interior volume 70/72, apertures 30 disposed on the aerodynamic surface of the airfoil, with fluid being drawn in and exhausted through the apertures by the combination of the vacuum pump and the air compressor 14, with the drawing and pushing being performed selectively through the upper and lower surface of the airfoil 12, and with one of the upper and lower surface being selected through which the drawing and pushing steps are performed.

Claims 1-3, 14-15, and 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated by O-Neil (figures 4-5). Note the airfoil 1, apertures 17 on the outer skin which communicate the outer aerodynamic surface to the interior volume 11, 12, and diaphragms 13, which are movable from a first position to a second position to push air through the apertures and out of the interior volume of the airfoil, and which are movable from the second position to the first position to draw air through the apertures and into the interior volume. The drawing and pushing steps are performed selectively through the upper and lower surface by valves 15 in combination with the diaphragms, and non-uniform flow (pressure) is sensed by at the upper and lower surfaces of the airfoil near 4, 5 to modulate the valves and select one of the upper and lower surface through which the drawing and pushing steps are performed.

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Claims 1-6 and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Glezer (figures 1 and 6). Note the airfoil 91, apertures 10 on the outer skin, and diaphragms 18, which are movable from a first position to a second position to push air through the apertures and out of an interior volume of the aerodynamic structure, and which are movable from the second position to the first position to draw air through the apertures and into the interior volume. The aerodynamic structure may be a rotor blade. The drawing and pushing steps are performed by the diaphragms. Note controller 24 coupled to each diaphragm.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was

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made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7-8, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glezer in view of O'Neil. Glezer discloses an active control device substantially as claimed as set forth above, but does not disclose first and second sensors operatively coupled to the controller which are disposed on the aerodynamic surface and which measure a flow characteristic of air proximal the first and second sensors, with the controller regulating the oscillation frequency of at least one diaphragm in response to the flow characteristic, with the first and second sensors comprising pressure transducers, and being disposed proximal the leading edge.

O'Neil (figures 4-5) shows active control device having first and second sensors near 4, 5 operatively coupled to a controller which are disposed on an aerodynamic surface of an airfoil and which measure a flow characteristic of air proximal the first and second sensors, with the controller regulating the oscillation frequency of at least one diaphragm 13 in response to the flow characteristic, with the first and second sensors comprising pressure transducers, and being disposed proximal the leading edge, for the purpose of managing lift and reducing noise.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the active control device of Glezer with first and second sensors

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operatively coupled to the controller which are disposed on the aerodynamic surface and which measure a flow characteristic of air proximal the first and second sensors, with the controller regulating the oscillation frequency of at least one diaphragm in response to the flow characteristic, with the first and second sensors comprising pressure transducers, and being disposed proximal the leading edge, as taught by O'Neil for the purpose of managing lift and reducing noise.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Soviet Union Patent 1,761,973. The Soviet Union Patent discloses an active control device substantially as claimed as set forth above including an aperture 6 disposed along the aerodynamic surface of the airfoil, but does not disclose that the distance is at least 5 percent but not greater than 8 percent of the chord length from the trailing edge of the airfoil.

The location of the aperture/apertures relative to the chord of the airfoil is deemed to be a matter of choice in design. It would have been obvious to a person having ordinary skill in the art to select the location to be a distance that is at least 5 percent but not greater than 8 percent of the chord length from the trailing edge of the airfoil, for the purpose of providing enhanced airfoil acoustic signatures and efficiency, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 are rejected under the judicially created doctrine of double patenting over claims 23, 40, 40, 40, 40, 40, 40, 40, 40, 40, 23, 23, 40, 23, 23, 23, 23, 23, and 23, respectively, of U. S. Patent No. 5,938,404 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: All of the subject matter in the claims of the instant application.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application

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which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968).

See also MPEP § 804.

Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 are provisionally rejected under the judicially created doctrine of double patenting over claims 1, 4, 4, 12, 12, 12, 12, 12, 12, 1, 1, 12, 1, 1, 1, 11, 11, and 11, respectively, of copending Application No. 09/198,843. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: all of the subject matter in the claims of the instant application.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

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Claims 1-19 are provisionally rejected under the judicially created doctrine of double patenting all over claim 4 of copending Application No. 08/869,725. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: all of the subject matter in the claims of the instant application

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

### ***Prior Art***

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consists of 5 patents.

Mangiarotty is cited to show control of laminar flow by injection of acoustic energy.

Lurz is cited to show controlling boundary layer flow by vibration transmitters in a body.

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Humpherson is cited to show airfoils having slots though which circulation is controlled by piezoelectric actuators.

Meier is cited to show an arrangement for influencing a boundary layer on a body by blowing out and sucking fluid.

Kizilos is cited to show an airfoil having lift adjustment by means of blowing fluid and pressure sensors.

***Allowable Subject Matter***

Claims 20-22 are allowed.

Since allowable subject matter has been indicated, applicant is encouraged to submit formal drawings in response to this Office action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Verdier whose telephone number is (703) 308-2638. The examiner can normally be reached on Monday-Friday from 9:00 a.m. to 5:30 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on (703) 308-1044. The fax phone number for this Group is (703) 305-3588.

**Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.**

CV  
July 14, 2000

A handwritten signature in black ink, appearing to read "Chris Verdier", with a stylized flourish at the end.

Christopher Verdier  
Primary Examiner  
Art Unit 3745